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ABSTRACT

Aimed at classroom teachers interested in teaching learning skills to their elementary and secondary students, this guide offers an alternative to teaching "facts" that may rapidly become outdated. The guide is based on Dr. Leslie Hart's Proster Theory, which proposes that the brain requires large amounts of input to function; that after searching this input it selects the most appropriate existing program structure or "proster" to process the information; and that when no existing proster can be found new ones are created and learning takes place. These ideas are reflected in the Learning to Learn model used in this guide, and the guide's three sections correspond to this model. They are: (1) Input, which creates awareness of a wide knowledge base for the student to draw on; (2) Processing, which teaches students to organize and draw meaning from information; and (3) Output, which teaches students methods of remembering information for testing purposes. The first section of the guide, detailing activities for input, features sensory "warm-up" exercises, problem-solving pictures and puzzles, and information seeking exercises. The second section offers processing activities, such as crossword puzzles, information organizing grids, classifying and inference exercises, and information "Mapmaking." The third section, on output, shows students how to make acronyms, provides grouping and visualizing strategies for memorization, and explains how to schedule their time. An answer key and addresses to write to for further information on learning to learn conclude the guide. (JC)

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ED284204

The Philadelphia Inquirer
Monday, January 12, 1987

LEARNING TO LEARN

ewspaper In Education Supplement
An education in itself

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

All subjects of study in school can be approached confidently by students who have mastered a few strategies for learning.

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To the teacher: Help your students learn to learn

"If our schools have any function, any justification, it is to prepare young people for the future. If it prepares them for the wrong future, it cripples them."

Alvin Toffler's words speak volumes to the classroom teacher frustrated by the crowding of one content area after another into an already overstuffed curriculum. What skills do students really need for the future? Toffler, in agreement with other theorists, proposes that the answer to that question can be found in process skills instruction.

Process skills include the ability to locate information, analyze, synthesize, create, communicate, problem solve and learn independently; skills that will stay both current and relevant in the face of the information explosion now confronting us all.

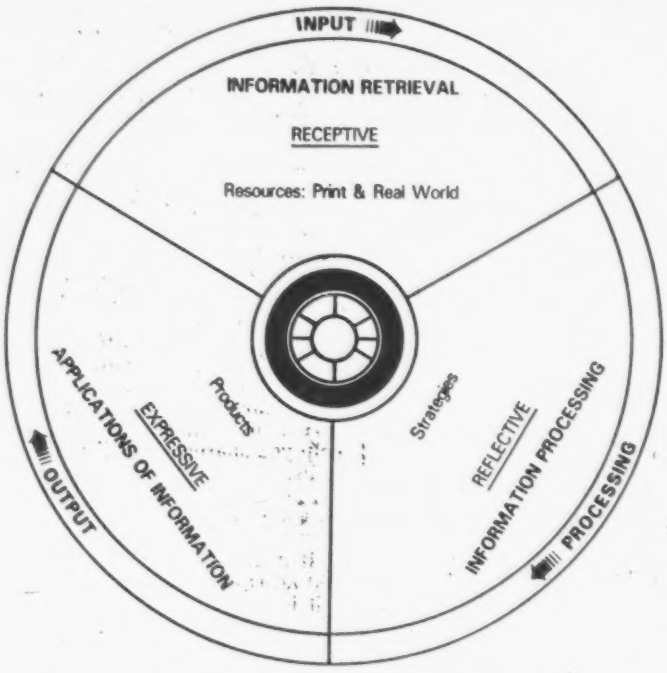
Teachers who push to "finish the textbook by June" may be setting themselves up for failure. They can never possibly teach students all the facts they will ever need to succeed in the real world outside the classroom.

LEARNING TO LEARN presents students with an opportunity to learn and practice lifelong learning skills. These are defined by Graham and Robinson as those "specific abilities which students may use alone or in combination to learn the content of the curriculum on their own."

The College Board in its 1983 publication, *Academic Preparation for College: What Students Need to Know and Be Able to Do*, describes "key abilities in learning how to learn." These include the ability:

- to locate and use informational resources of all kinds.
- to follow instructions in order to recall, comprehend, analyze, summarize and report the main ideas from reading and lectures.
- to prepare for exams.
- to set study goals, schedules and priorities consistent with one's own progress.

This educational supplement is organized with a specific model in mind. As shown on this page, the LEARNING TO LEARN model depicts learning as a three-stage process similar to the function of a computer: input, processing, output. This



supplement is divided into three sections, corresponding to those three stages.

Through the activities in the "Input" section of the supplement, students will develop a keener perception of the world around them, and will learn about the wide range of informational resources available to them. This is a starting point: Learning begins with the inputting of information to create a knowledge base.

Activities in the second section, "Processing," offer the student practice in using strategies to organize and draw meaning from information. A variety of thinking frameworks are presented to help students classify, categorize, predict, infer, sequence, summarize, analyze and evaluate; in brief, to think about one's own thinking in a logical, methodical fashion.

Finally, the "Output" section shows students several ways to retain information for testing situations.

Much of this supplement's organizational scheme has been inspired by the research of Leslie Hart (1983). Dr. Hart's Proster Theory proposes that the brain requires large amounts of input, or raw materials, to function. Confronted with these masses of information, the brain searches for patterns, for connections to previous experience. Following an evaluation phase, the brain selects the most appropriate program structure or "proster" to process the information. When there is no existing proster, a new program is created. This, according to Dr. Hart, is what learning truly is.

LEARNING TO LEARN also reflects the brain compatibility facet of Dr. Hart's research. That is, the notion that the neocortex of the brain functions best under certain conditions. The author of the supplement has attempted to create ideal conditions by emphasizing:

- learning-by-doing activities,
- problem solving that is based on the real world,
- assorted informational sources, and
- non-threatening learning situations.

For more information on Proster Theory or brain compatible learning, see Leslie Hart, *Human Brain and Human Learning*, White Plains, NY: Longman, 1983.

The author hopes that teachers will use this supplement as a stepping stone to further explorations of learning and thinking in the classroom. Like swimming, bicycle riding or ballet lessons, at first there may be a sense of awkwardness; it just doesn't happen naturally! The good news is that with more practice, things get easier.

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EDPRESS

Senses need stretching

Before you start a gym class, chances are your physical education teacher leads you through a warm-up session. It's a good idea to stretch your muscles and get your heart rate up before vigorous physical exercise.

The same idea can be applied to mental exercises, like those in this LEARNING TO LEARN supplement. To be effective learners, we need to use our senses: sight, smell, taste, touch and hearing. Let's warm up those senses with a few sense-stretching activities.

Awaken your eyes

Take an index card and cut out a small (2" by 2") square from the center. Wander around and look at your surroundings through the index card. Think of the index card as a camera. Choose what you will include in the "picture;" what you will eliminate. It's up to you.

Stand up on a chair and look down with a bird's eye view. Try crouching on the floor and looking upwards. Look for lines, textures, patterns and colors. Finally, look through the index card "camera" upside down. There's so much to see when you turn on your eyes and really look.

Awaken your ears

Go into your room, close the door and switch off all the lights. Be sure that the radio and television are turned off, too. Sit in the dark and tune in to the sounds of your house. There are so many sounds to hear when we tune into them in a conscious way.

Awaken your nose

Take a walk in your neighborhood and focus on the different smells. Is there a bakery around the corner? Is someone cooking dinner? What does it smell like? Certain smells can remind us of different times and places in our lives.

Awaken your senses of taste and touch

Do you wolf down your meals without even noticing what's on the plate? Tune in to spices and flavors; really taste what you're eating. On your next clothes shopping trip, go through the racks and experience the range of different textures in the clothes — textured cottons and corduroys, scratchy wools, smooth silks.

Now that you've completed a sensory warm up, it's time to put your mind to work.

A rose is a rose

Imagine that you have a real rose, fresh from the florist shop, and a plastic rose in front of you. Work with a partner to develop a list of descriptive details for each flower. A chart is provided to help you focus on the senses relevant to this exercise.

Adapted with permission from *Understanding The Writing Process: Introducing Students to Composing*, copyright 1985 by Diane Bloom, New Jersey Department of Education, Trenton, N.J.

SENSES	DETAILS	
	REAL ROSE	PLASTIC ROSE
SIGHT		
SMELL		
TOUCH		

Listeners don't just hear

"Are you a good listener?

Students who "learn to think and think to learn" realize that listening is an important ingredient to success in school.

Good listeners focus on the speaker. They don't hesitate to ask questions to clarify the information at hand. Sometimes effective listening means restating what you think you heard back to the speaker, just to check that you've gotten the facts straight.

But, most of all, listening means thinking: thinking about the information coming into your brain through your senses.

Here are some activities to help you sharpen your listening skills.

Trick questions

1. If it takes three minutes to boil an egg, how many minutes will it take to boil 33 eggs?

2. There are 12 one cent stamps in a dozen. How many two cent stamps are there in a dozen?

3. How much dirt may be removed from a hole that is three feet deep, six feet wide and 12 feet long.

4. Take four apples from six apples and what do you have?

5. If you went to bed at 7 p.m. and set the alarm for 8 in the morning, how many hours of sleep would you get?

6. How many birthdays does the average person have?

7. Some months have 30 days. Some have 31. How many months have 28 days?

8. I've got two U.S. coins that total 55 cents. One of the coins is not a nickel. What are the two coins?

9. If a doctor gave you three pills and said to take one every half hour, how long would the pills last?

10. Write fourteen thousand, fourteen hundred, and fourteen.

Find the Answer Key on pg. 19.

Toothpick puzzler

Directions: For this activity you will need 20 toothpicks and a partner. Give 10 to your partner; keep 10 for yourself. Sit in pairs, back to back.

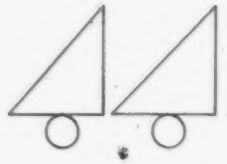
Partner 1 makes a design with the 10 toothpicks. When the design is complete, partner 1 directs partner 2 to recreate the same design through a series of clear, concise spoken directions. (For example, "Place toothpick one in the center vertically" is more informative than "put toothpick one down.") When the directions for all ten toothpicks are given, partners should examine each other's creations.

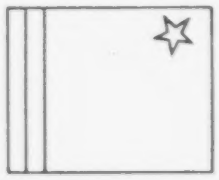
Discuss where communication may have broken down. Switch roles. Try it again.

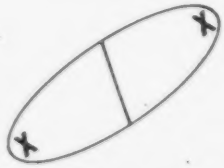
Listening skills definitely improve with pratice! Before long both partners will be impressed that, even with more complicated constructions, they can create each other's designs perfectly.

Hint: If toothpicks are unavailable, try the same activity using illustrations. Give each partner marking pens and drawing paper. This time the goal is for partner 1 to direct partner 2 to create an illustration by providing easy-to-follow directions.

Here are some sample illustrations to get your teams started. Or try creating some of your own.







(Continued on next page)

Listen up

Continued from preceding page

Can you follow directions?

1. Read everything before doing anything.

2. Put your name in the upper right-hand corner of this page.

3. Circle the word "name" in the second sentence.

4. Draw five small squares in the upper left-hand corner of the page.

5. Put an X in each square mentioned in number 4.

6. Put a circle around each square.

7. Sign your name under the title of this page.

8. After the title, write "yes, yes, yes."

9. Put a circle around sentence number 7.

10. Put an X in the lower left-hand corner of this page.

11. Draw a triangle around the X you just made.

12. On the back of this page, multiply 70 by 30.

13. Draw a circle around the word "page" in sentence number 4.

14. Call out your first name when you get to this point in the test.

15. On the reverse side of this page, add 107 and 278.

16. Put a circle around your answer to this problem.

17. Count in your normal voice from 18 to 1 backwards.

18. Punch three small holes in your paper with your pencil here:

19. Underline all even numbers on the left side of this page.

20. Now that you have finished reading carefully, do only sentence one and two.

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What is wrong here?

Are you a careful observer?

Effective learning begins by using your sense of sight to look at and really see the details, colors, shapes and characteristics of things in the world around you.

So much of what we come to know is based on direct observation. Your powers of observation can be sharpened with practice.

Begin your training by looking carefully at the drawings on this page, at left, and on the lefthand side of page 5. After examining each one, figure out what's wrong.

The first one, below, has been done for you.

The spine of the book is on the wrong side.

Excerpted with permission from *Odyssey: A Curriculum for Thinking (Foundations of Reasoning)*, copyright 1986, Mastery Education Corp., 85 Main Street, Watertown, Mass. 02172.

Infer and interpret 'info'

Sometimes the information you need is right in front of you: "Big as life," as they say. Other times, the meaning may be hidden. Those are the times you have to call upon your LEARNING TO LEARN skills.

In this activity, you will see some drawings. In each of the three cartoons something is happening that is not immediately clear. To infer correctly exactly what is going on, try a three-step approach:

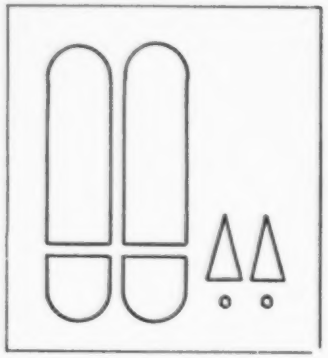
Step 1 Describe what you see.

Step 2 Describe what is happening here.

Step 3 Create a caption for the cartoon that indicates what is being said.

Hint: Be creative! Your classmates may have different responses for steps 2 and 3.

The first one, at top right, has been done for you. After reading the example, come up with your own interpretations for the two drawings below.



What you see

Step One: I see shoes for a gigantic man next to shoes for a smaller woman.

What is happening

Step Two: The two figures are standing next to one another, probably talking.

What is being said

Step Three: "How long have you been with the circus?" or *The Guinness Book of World Records* proudly presents . . . "

Find the Answer Key on pg. 19.

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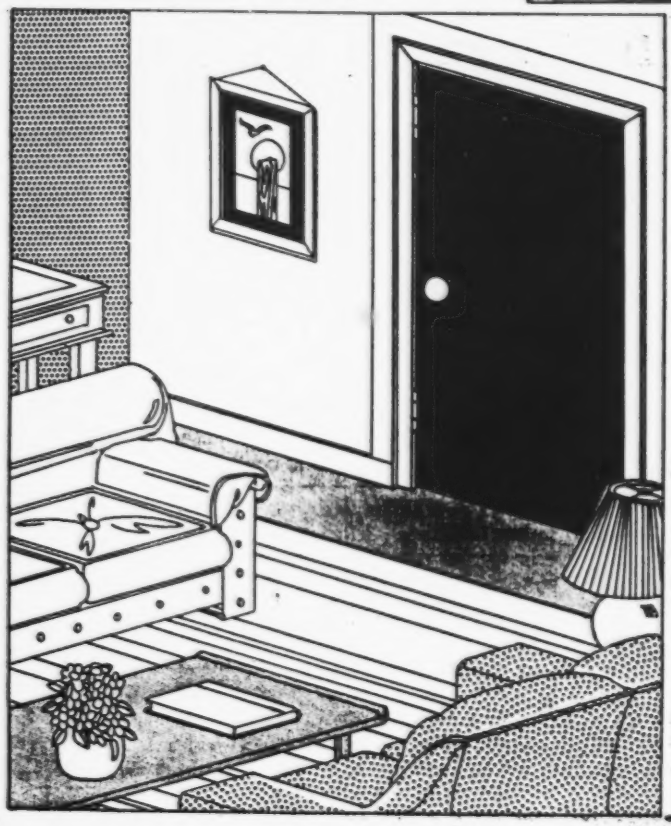
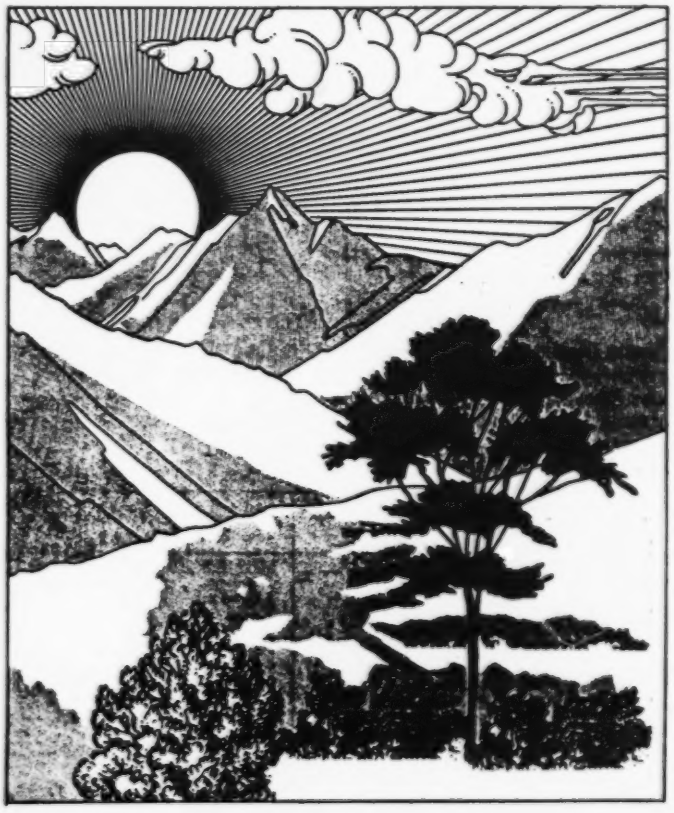
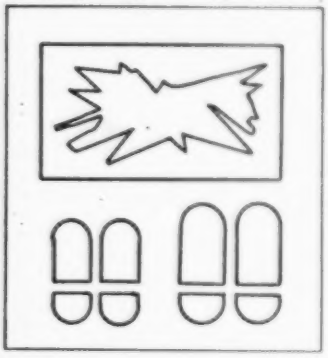


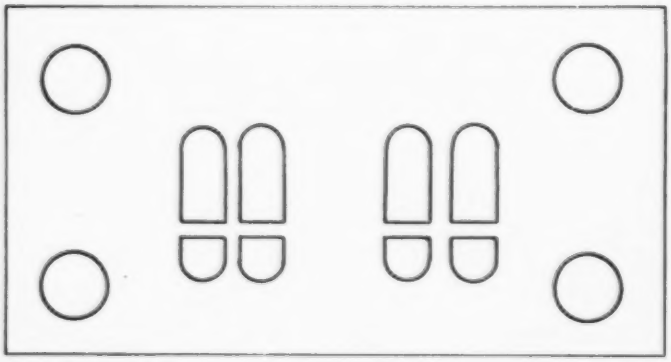




Step One:

Step Two:

Step Three:



Step One:

Step Two:

Step Three:

Pathfinders plan a thorough search for information

Information comes in all shapes and sizes. When assigned a project that requires research, many students make a stop at an encyclopedia and look no further.

Using the Pathfinder chart below is one way to thoughtfully plan a thorough search for information.

Steps one through seven take you on a tour through the library. Steps eight and nine lead you beyond the library to real world sources and experiences.

An effective strategy for using the Pathfinder chart is to keep track of all the sources you find along the way. Why? For two reasons. You may need to retrace your steps and use a source a second time. Secondly, chances are your teacher will ask you for a bibliography along with your finished project.

Happy hunting, pathfinder!

Step One:	CARD CATALOG	List the subject headings you used.
Step Two:	BOOKS	Children's collection, adult collection, personal library, bookstores, classroom library.
Step Three:	REFERENCE TOOLS	general encyclopedias subject encyclopedias geographical sources biographical sources dictionaries almanacs directories telephone books
Step Four:	VERTICAL FILES	Subject folders filled with pamphlets, etc. in the school and public libraries.
Step Five:	AUDIOVISUAL	TV shows movies slides radio shows filmstrips records cassettes
Step Six:	INDEXES to newspapers and magazines	Reader's Guide to Periodical Literature, National Geographic Index List the subject headings you used.
Step Seven:	INTERLIBRARY LOAN	Borrow materials from other public libraries. Contact the reference librarian in your local public library for the procedure.
Step Eight:	NETWORK (for primary sources)	Share your informational needs with friends, relatives, teachers and others. Be pleasantly surprised how networking like this can connect you with sources like: business people senior citizens professors club members organizations librarians government officials politicians Find an expert on your topic and contact him or her for an interview: Name: Phone #: Get the facts firsthand!
Step Nine:	SEND AWAY for information	Locate the Encyclopedia of Associations in the library, look up the address of an association related to your topic and send a letter.

Where can you look to find out?

Directions: Reference materials in the library can help you find information of all kinds, especially answers to factual types of questions. Look at the column titled "information needed" and try to match it up with the best possible "reference source." Place the number of the reference source in the blanks provided in the "answer" column. **Hint:** Sometimes information can be found in more than one place, so choose the *best* answer.

Answers:		
	INFORMATION NEEDED:	**REFERENCE SOURCE:**
_____	A. George Washington's date of birth.	1. Almanac
_____	B. A magazine article about terrorists.	2. Dictionary
_____	C. The population of Canada.	3. Atlas
_____	D. Your daily horoscope.	4. Encyclopedia of Associations
_____	E. The definition of the word "gaiter."	5. General Encyclopedia
_____	F. The name of the tallest man in the world.	6. Dictionary of Antonyms
_____	G. A map of New Jersey.	7. Reader's Guide to Periodical Literature
_____	H. Five words that mean the opposite of "nadir."	8. Telephone directory
_____	I. A place that sells fenders for a 1984 Volkswagen.	9. Guinness Book of World Records
_____	J. National organizations devoted to the preservation of wildlife.	10. Newspaper

Learn news vocabulary

The newspaper serves many different purposes. It informs, instructs, advises, entertains and persuades with its wide range of stories, photographs, advertisements and special features.

The newspaper can be an excellent source for students needing current information for school projects. Where else can you find the latest changes in the stock market, the impact of recent presidential decisions and the answers to yesterday's crossword puzzles, all in one place?

Do you know the vocabulary of the newspaper world? Try your hand at searching through the word puzzle on this page to locate words associated with the newspaper.

There are 45 words hidden in the puzzle horizontally and vertically. How many can you find? More importantly, how many can you locate in today's newspaper? Hint: Use the table of contents on the front page of the newspaper if you get stuck. One word has been found for you.

A	R	E	P	O	R	T	E	R	P	C	O	L	U	M	N	I	S	T	A
D	S	V	X	Z	L	M	N	O	W	E	A	T	H	E	R	Q	R	S	Z
S	T	S	T	O	C	K	M	A	R	K	E	T	G	C	A	Y	W	T	E
D	U	W	Y	F	A	S	H	I	O	N	H	G	F	D	B	Z	X	U	G
E	C	W	R	C	H	A	B	C	D	E	F	G	L	E	A	D	F	V	I
R	R	H	E	L	O	R	U	P	O	N	M	L	K	J	I	H	A	H	K
E	O	Y	C	A	R	E	S	A	B	E	C	O	M	I	C	S	C	U	N
A	S	A	I	S	O	V	I	C	D	W	R	S	T	U	V	W	T	M	O
L	S	B	P	S	S	I	N	E	F	S	P	O	R	T	S	X	F	A	Q
E	W	Y	E	I	C	E	E	N	T	E	R	T	A	I	N	M	E	N	T
S	O	L	S	F	O	W	S	G	V	I	J	K	D	Z	Y	O	A	I	U
T	R	I	V	I	P	S	S	H	I	L	M	N	S	A	B	V	T	N	S
A	D	N	W	E	E	H	E	L	P	W	A	N	T	E	D	I	U	T	R
T	S	E	Y	D	N	T	A	B	L	O	I	D	E	D	C	E	R	E	P
E	R	T	Y	O	M	L	K	J	O	P	Q	R	F	G	H	S	E	R	N
I	Q	U	Z	P	Q	O	B	I	T	U	A	R	I	E	S	B	C	E	L
J	P	W	A	I	C	D	A	R	T	I	C	L	E	S	F	E	D	S	J
K	W	H	E	N	E	F	G	H	W	H	A	T	A	G	H	I	J	T	H
L	H	E	B	I	T	R	A	V	E	L	B	A	N	N	E	R	K	X	F
M	O	R	H	O	W	I	H	E	A	D	L	I	N	E	N	M	L	Y	D
N	O	E	M	N	L	J	K	E	D	I	T	O	R	I	A	L	S	Z	B

A strategy makes sense

There's a joke that goes something like this:

Two men go off into the woods on a hike. One is an expert on the "great outdoors." The second man is a complete novice. They walk for a few hours on the trail, during which time the expert lectures his friend endlessly about the natural wonders surrounding them. Suddenly a hungry bear lumbers onto the path. The man who has never before stepped foot in the woods screams, takes off his hiking boots and replaces them with sneakers from his backpack.

"What are you doing?" asks the expert, watching his friend lace up his sneakers. "If you knew as much about bears as I do, you'd know that they can outrun a man. You don't stand a chance."

"I don't have to run faster than the bear," replied the novice with a smile. "I just have to run faster than you!"

This story says a lot about LEARNING TO LEARN skills. The student who survives and succeeds in school is one who learns to use a number of different strategies in the appropriate situation.

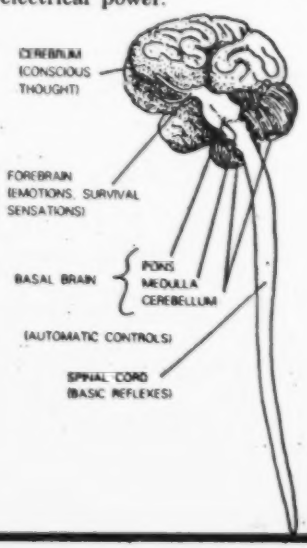
Call it a "bag of tricks," call it tactics, or call it just using your head. Every subject in school has basic factual information that must be learned. The brightest students in your class know different ways to approach learning that information.

The "Processing" section offers a range of different strategies that you can use to approach learning in an organized, thoughtful way. With practice, you will be able to call upon these strategies to absorb knowledge and make sense of your schoolwork.

Your brain feels no pain

Believe it or not, your brain:

- is a mass of 100 billion cells
- weighs one pound at birth; two pounds by age one; the third and final pound develops between the ages of 2 and 16
- consumes 20 to 25 percent of the oxygen you breathe (even though the brain is only 20 percent of your body's weight)
- consists of about 80 percent water
- receives 1¼ pints of blood every moment you are awake
- can be poked and prodded and still feel no pain
- varies in weight by sex; the average male brain weighs 49 oz., the average woman's brain 44 oz. (Good news! Brain weight has nothing to do with intelligence!)
- never replaces cells damaged or destroyed by accident, aging, drug or alcohol abuse
- generates about 25 watts of electrical power.



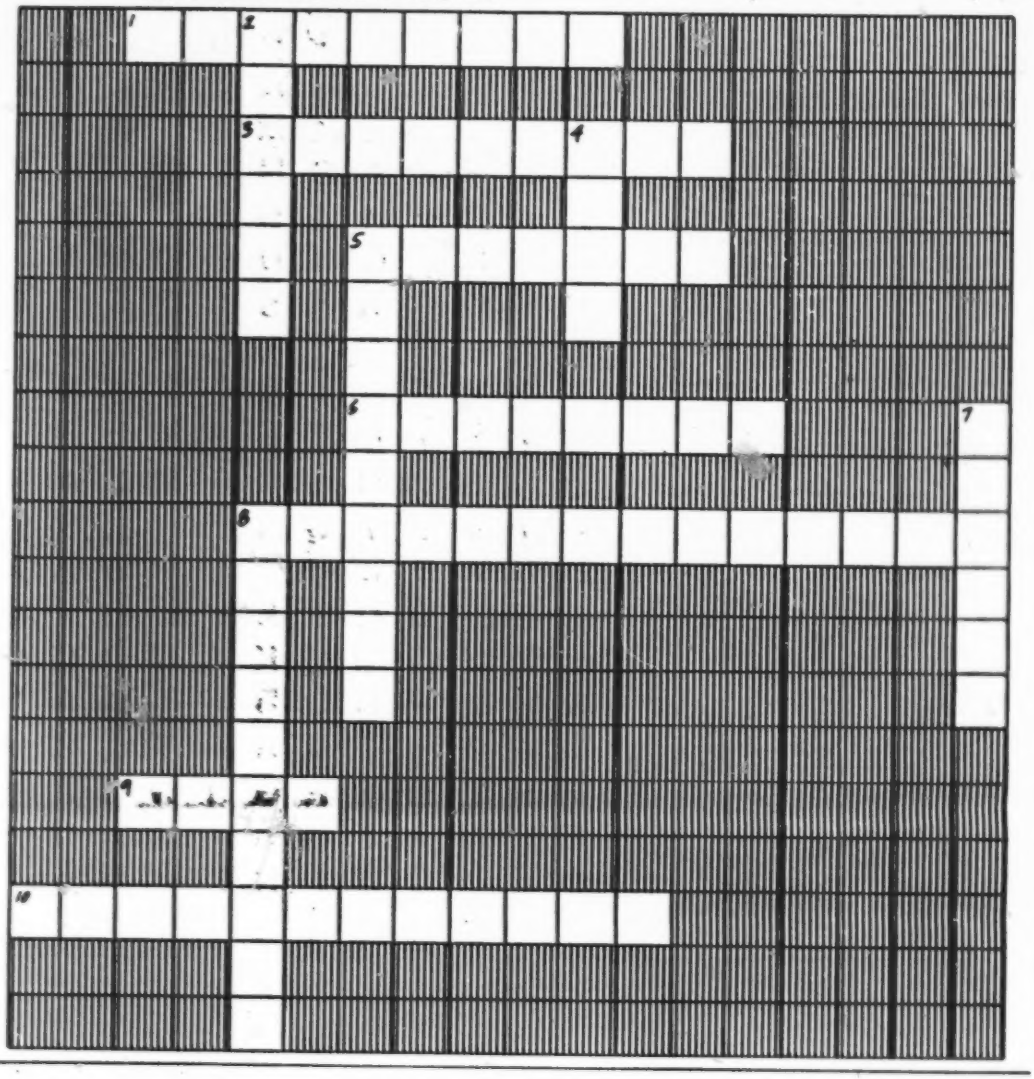
Learn how your brain functions

How much do you know about your brain and how it functions?

This crossword puzzle should send you on a trip to your school or public library to search for answers.

Hint: Answers can be found in nonfiction books, general encyclopedias and science reference books.

Happy hunting!



ACROSS CLUES

1. brain protection
3. oldest part of brain
5. nerve cells
6. top of brain
8. bridge connecting right and left brain
9. ----matter
10. ability to think abstractly

DOWN CLUES

2. automatic reaction
4. long arm of a nerve cell
5. new brain
7. how the brain remembers
8. balance center of the brain

Find the Answer Key on pg. 19.

Questions

Pretend you are a television interviewer. Your show comes on every morning at 10. Every night your "homework" is to think of questions to ask your guest for the next day's show.

Here's your guest list for the week. Prepare for the show by getting a list of questions ready. Try to think of at least three questions for each guest. Make the questions interesting enough so that the guest will chatter on endlessly (at least until the first commercial).

Nothing's more embarrassing on a talk show than when a guest answers a question with a simple "yes" or "no" followed by a long silence. Try starting your questions with "why" or "how." Good luck with your questions and your viewer ratings.

DAY	GUEST LIST	QUESTIONS
MONDAY	A teacher who has just won the lottery.	1. 2. 3.
TUESDAY	A 12-year-old who has ESP.	1. 2. 3.
WEDNESDAY	Lee Iacocca.	1. 2. 3.
THURSDAY	A 10-year-old freshman at Princeton University.	1. 2. 3.
FRIDAY	A teenager who has just published her first novel.	1. 2. 3.

To draw informative answers, you have to ask good questions. Asking good questions requires preparation. You have to think about the information you want and about the best way to get it.

Alysa — this is your life! (Classified)

Your senses are constantly bombarded by information of all kinds. It is a major task for your brain to process and make sense of all this data.

One way your brain manages is by sorting all the data into classes. First, placing similar items together; and second, checking its data base of prior knowledge and experiences for a match. Most of the time you are not even aware that this process is going on.

Alysa Cummings is the author of this LEARNING TO LEARN supplement that you are reading. And, ladies and gentlemen, this is her life....

Annie Hall	Stephen King	James Herriott	Lean cuisine
Kitty Litter	Aerobic dancer	Educational trainer	Freelance writer
Haddonfield, N.J.	Photographer	Aliens	Buffalo, N. Y.
Librarian	Popcorn	Long Island, N. Y.	Cheesecake
Catnip	9 Lives chicken	Stand By Me	

Directions. Read all the words listed above. There are at least six major categories in the group. Classify Alysa Cummings' life by creating an outline. Figure out the subtopic headings and fill in the words in the right places. Then write a biographical sketch, a paragraph in length, describing your impressions of this person. What can you infer from just a list of words?

Now work with a partner in class. Each of you should take a few minutes to create a personal "This is Your Life" list of words. Trade papers and repeat the same process again: sort and classify, outline, then write a paragraph-long biographical sketch. Show your partner your paragraph. Were your impressions of each other accurate?

Find the Answer Key on pg. 20.

To classify, look for the connections

Directions. Look at each group of words and figure out a way to classify the list. The first one has been done for you.

1. DESK SUPPLIES
   - staples
   - paper clips
   - pencils
   - scotch tape
   - blotter

2. _____
   - cover
   - title page
   - table of contents
   - index
   - spine

3. _____
   - sill
   - pane
   - frame
   - glass
   - blind

4. _____
   - lipstick
   - wallet
   - keys
   - hairbrush
   - sunglasses

5. _____
   - soap
   - shaver
   - shampoo
   - curtain
   - washcloth

6. _____
   - red
   - mauve
   - flesh
   - purple

7. _____
   - helmet
   - goalpost
   - down
   - referee
   - cheerleader

8. _____
   - trains
   - cars
   - boats
   - buses
   - subways

9. _____
   - crossword
   - wordsearch
   - jumble
   - diagramless
   - anagrams

10. _____
    - horseracing
    - blackjack
    - slot machines
    - lottery
    - football pool

11. _____
    - legs
    - back
    - cushion
    - arms
    - rungs

Find the Answer Key on pg. 19.

Get Henry set straight

In the comic strip below, Henry is having some problems in the kitchen.

The panels are numbered consecutively, 1 through 6, but they have been mixed up. It is your job to place the panels in the correct order, indicating by panel number the correct sequence of events.

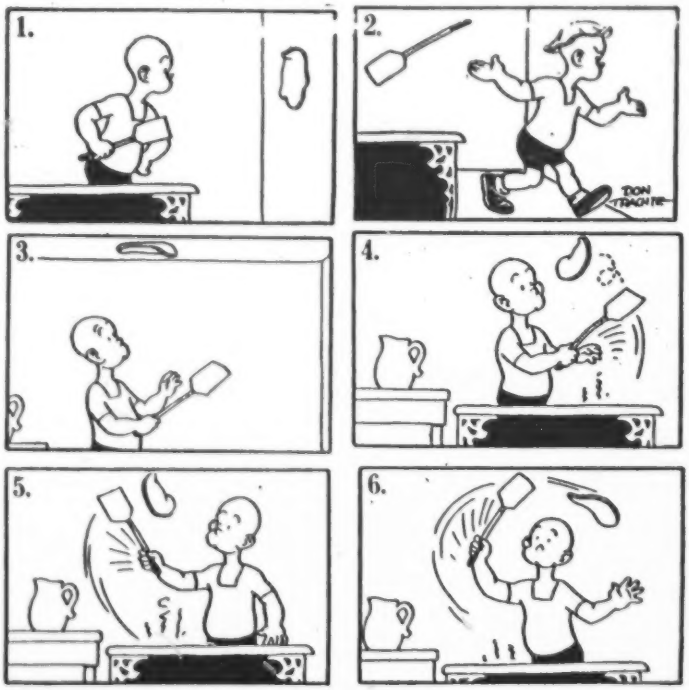
Here are some suggested strategies:

1. *Look* carefully at all the panels and get an idea of the action.

2. *Think* about clues that suggest the right order. (Question yourself: What might come first? What probably happened last?)

3. Test your ideas. Try a sequence.

4. Look at the order you've just chosen and question yourself. Does it make sense?



Find the Answer Key on pg.19.

Read 'between the lines'

"Reading and thinking" means more than sounding out the words and memorizing the facts on the page. Sometimes readers have to infer meaning, which means reading "between the lines."

When teachers ask inference questions, they are directing you to read carefully, analyze hidden meanings and gather evidence to support your beliefs.

On this page you will practice reading between the lines with three simple stories that might have been your favorites a long time ago.

Directions: Read each passage. If you can infer that a numbered statement below the passage is true, write the letter "T" for true in the blank space provided at the beginning of the statement. Offer evidence for your answer in the space provided below each statement. If you cannot infer that the statement is true, write the letter "F" for false and explain why in the "evidence" space provided. The first one has been done for you.

A. Jack and Jill

Jack and Jill went up the hill to fetch a pail of water. Jack fell down and broke his crown, and Jill came tumbling after.

F 1. All people who go up hills fall down.

Evidence: False, because this story only deals with Jack and Jill, not all people.

2. Jack was angry at Jill

Evidence:

3. There was water at the top of the hill.

Evidence:

4. Jill must have been fat.

Evidence:

5. Jack fell first and Jill fell second.

Evidence:

B. Little Miss Muffet

Little Miss Muffet sat on a tuffet, eating her curds and whey, when along came a spider and sat down beside her and frightened Miss Muffet away.

1. Miss Muffet was frightened by the spider.

Evidence:

2. Miss Muffet liked curds and whey.

Evidence:

3. Miss Muffet was watching TV.

Evidence:

4. Spiders can sit down.

Evidence:

5. Miss Muffet had already started to eat when the spider came along.

Evidence:

C. Snow White

Snow White's wicked stepmother hated her and wanted to dispose of her. The stepmother mixed a special potion and dipped an apple into this potion. She then disguised herself and tricked Snow White into taking a bite from the apple. As soon as she took a bite from the apple, Snow White fell to the floor, unconcious.

1. The stepmother was not a nice person.

Evidence:

2. Maybe Snow White deserved what she got.

Evidence:

3. The stepmother tricked Snow White.

Evidence:

4. Snow White died when she hit the floor.

Evidence:

5. Snow White didn't like her stepmother.

Evidence:

Find the Answer Key on pg. 20.

Adapted from *Inductive Thinking Skills: Intermediate (A)*, McGraw-Hill Publication, P.O. Box 448, Pacific Grove, California 93950. Reprinted with permission.

Things that aren't said can be hinted or implied

Look carefully at these two ads for area restaurants.

Both ads contain explicit information: some basic facts you need to know in order to eat at the restaurants. The word explicit means clear, straightforward, direct. For example, both ads list the restaurant's phone number. Can you find other examples of explicit information in these ads?

1. _____

2. _____

3. _____

4. _____

There is also some implicit information in these advertisements. There are hidden messages or hints that require some thinking to figure them out.

Check your ability to decipher implicit, or implied, information by answering the following questions. Write the letter M to indicate Mom's Place, or the letter V to indicate Versailles.

Find the Answer Key on pg. 20.

Adapted from *Odyssey: A Curriculum for Thinking (Understanding Language)* Copyright 1986, Mastery Education Corporation, 85 Main St., Watertown, Massachusetts 02172.

Which restaurant would you choose if you wanted to . . .

Answers:

_____ 1. Have a birthday party for your five-year-old sister.
_____ 2. Wear a t-shirt and a pair of jeans.
_____ 3. Eat escargot.
_____ 4. Get an edible birthday present from someone you don't know.
_____ 5. Go out to eat without making a reservation ahead of time.
_____ 6. Eat a hamburger.
_____ 7. Give your parents an anniversary present.
_____ 8. Really impress your friends.
_____ 9. Gain five pounds and have part of your allowance left over.
_____ 10. Watch a sommelier at work.

Practice finding the main idea and writing a lead

The beginning, or lead, of a newspaper story contains the so-called '5Ws': WHO, WHAT, WHEN, WHERE, WHY.

In the newspaper story below, the headline and the lead have been removed. Your task is to:

1. *Read* the passage.

2. *Think* carefully about the main idea of the piece with regard to the details provided.

3. *Write* an opening, or lead, for the story and a headline.

4. Look at the bottom of this page to see how the story actually appeared in The Philadelphia Inquirer.

Here's the story:

Man and monkey were approached by a man wearing a red sweater, gray pants and a hooded jacket, who stopped and asked if he could hold Mr. Mike.

He did more than hold him.

He "brings out a carving knife with a blade about eight inches long, grabs Mr. Mike's collar and puts the knife to his throat," Agnello told the New York Daily News.

"Hey man, you better give me the money or I'm going to cut the monkey's head off," Agnello quoted the monkey mugger as saying.

Agnello said he reached into the collection basket and gave the mugger the $100 he had solicited Sunday.

The mugger then grabbed the monkey, and, much like a running back, he bolted through the crowd of people who had gathered. He was too much like a running back. He spiked Mr. Mike in the end zone.

When the mugger cleared the crowd, he "slammed Mr. Mike down into the pavement" and escaped, Agnello said.

Police said Mr. Mike was shaken but uninjured.

Here's space for your prewriting ideas:

WHO:

WHAT:

WHERE:

WHEN:

WHY:

YOUR TITLE:

YOUR LEAD:

New York: *A monkey becomes a conservative*

A dissbied monkey was mugged in New York City.

It happened in a pretty good neighborhood, too, in front of Saks Fifth Avenue.

The monkey, 2-year-old Mr. Mike, suffered a stroke recently, and he and his owner, Anthony Agnello, 26, of Southbury, Conn., were panhandling in front of Saks in hopes of raising cash to pay off about $1,200 in monkey rehabilitation bills.

After some weeks, the pair had about $500 to go. Then the mugger showed up.

Man and monkey were approached by a man wearing a red sweater, gray pants and a hooded jacket, who stopped and asked if he could hold Mr. Mike. He did more than hold him.

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Police said Mr. Mike was shaken but uninjured.

After the ordeal, Agnello, an exotic dancer who has taught Mr. Mike to strip, said you can keep Manhattan, the Bronx and Staten Island, too.

"We're not going to go to New York anymore," he said.

This article appeared in The Philadelphia Inquirer on Tuesday, Sept. 30, 1986

Picture a word problem

Word problems can be hard to solve. One strategy for better problem solving involves drawing a picture to represent the problem at hand. But before you can draw a picture, you need to ask yourself some questions:

- What information is given in the problem? What do I know?
- What do I need to find out? What dimensions are they looking for?

Here is an example:

Problem

Betty is shorter than Joanne. Nancy is taller than Joanne. Eileen is shorter than Betty.

Is Joanne taller or shorter than Eileen?

What do I know?

- four girls, named Betty, Joanne, Nancy, Eileen
- they are different heights.

What do I need to find out?

- Joanne's height compared to Eileen's
- The dimension is height — who is taller?

Now that the problem has been analyzed so you know what you're looking for, a picture can be helpful.

Make stick figures. Label them with the girls' names. The problem deals with the relative heights of the girls. Focus on the differences in height in your drawing. When you have a solution, reread the problem and check your work.

Solution:

Joanne is taller than Eileen.

Here are some word problems to help you practice your strategies.

Find the Answer Key on pg. 20

Excerpted with permission from *Odyssey: A Curriculum for Thinking (Problem Solving)*, copyright 1986, Mastery Education Corp., 85 Main St., Watertown, Massachusetts 02172

Problem A

Charles, Henry, Robert and James differ in weight. Charles weighs less than Robert. Henry weighs less than Charles, but more than James.

Who is the heaviest and who is the next to heaviest?

Dimension:

Representation:

Solution:

Problem B

On the daily walk that Mark, John, Peter and Joe take to school, Mark walks farther than John. Peter walks farther than Joe, but less far than John.

Can you tell who lives farthest from school and who lives the nearest?

Dimension:

Representation:

Solution:

Problem C

Jane, Rose, Kathy and Mary went shopping at the supermarket. Kathy spent less money than Rose, but more money than Mary. Jane spent more than Kathy, but less than Rose.

Who spent the most and who spent the least?

Dimension:

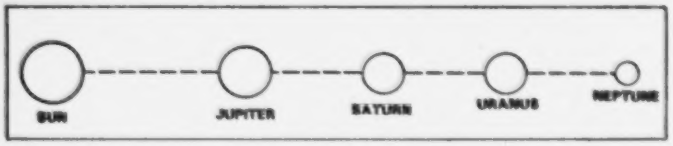
Representation:

Solution:

You create the problems

For these two activities, the challenge is for you to create a word problem from the picture that represents it. Trade problems with a classmate after you're through.

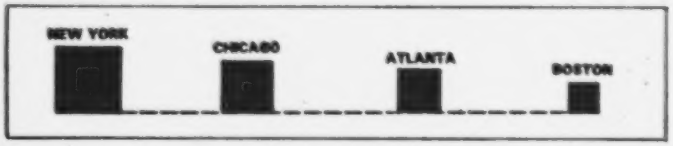
Problem A



Dimension involved: distance to the Sun

Statement of problem:

Problem B



Invent a problem that can be represented by means of this figure, and write its statement below.

Dimension involved: population

Statement of problem:

Find the Answer Key on pg. 20.

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Think about thinking while you're thinking

Directions. Here are five sentences that are out of order. Put them in their correct order so that the story makes sense. Place numbers from 1 to 5 in the blank space in front of each sentence.

___ At first I thought it was an insect.

___ Blackberry jam lost its appeal as I scurried from the woods.

___ As I stood uncertainly, a second bullet whined and again the rifle cracked.

___ One day I ventured into the woods to pick blackberries when I suddenly heard a whir overhead.

___ But then, a second later, I heard the crack of a .22 rifle.

Let's check your answers. Here is the correct sequence: 2-5-4-1-3.

Try to recall your thoughts as you did the sequencing. Was it something like this?

"Let me read all five sentences first. Okay, now where are the 'beginning' words? Aha, could be 'One day,' but what about 'At first!' 'One day' makes more sense. Let me try that. What's the whir! An insect. Okay, what's next! 'But then' is a transition. There's the rifle. Cue word, 'second bullet.' That must come next. 'I scurried from the woods.' That must come last. It sounds like a closing sentence. Let me reread the whole thing. Does it make sense?"

If you were thinking clearly, you followed a plan:

1. *Read* the entire exercise first.
2. *Look* for clues and cue words.
3. *Test* possibilities.
4. *Read* the final sequence and decide if it makes sense.

Clear thinkers have a plan and move through it slowly and carefully, checking their progress along the way. It's almost like listening to yourself think while you are actually thinking.

Psychologists call this "metacognition," or thinking about thinking. Tune into what you are doing: proceed with a plan, monitor things along the way, evaluate what happened when you get an answer. It takes a little longer sometimes, but thinking about your thinking will improve your quality of learning.

Try it! And if someone accuses you of talking to yourself, tell them you have money in the bank.

Here are some more sequencing problems. Place the sentences in order using the metacognition strategy.

Directions. Reorder the sentences that follow in exercises A,B,C and D so that they make good sense. In the blank space in front of each sentence, write a 1 by the sentence that should be first, a 2 by the second, a 3 by the third, and a 4 by the fourth, etc.

A. The Skeleton.

___ Worse than that, you would be nothing more than a big flabby blob.

___ However, while a building's frame is made of wood or steel, yours is made of bones.

___ Without these bones, you couldn't walk, stand, or even hold your head up.

___ A building needs a frame to give it shape, and so do you.

B. The Guacharo

___ It makes clicking noises that help it to find its way in total darkness.

___ Many birds have adapted to their environments in very interesting ways.

___ Echoes from these clicks tell it when to swerve in order to avoid a cave wall.

___ For example, one kind of bird called the guacharo lives in caves in South America.

C. Making the Most Out of Life

___ But then, a delightful child took me from the table, folded me many times, and made me into a beautiful boat.

___ When everyone had finished reading the news, they left me abandoned on a table and I thought my life had ended.

___ Long ago, before being a boat, I was a sheet of newspaper that everyone enjoyed reading.

___ I am a paper boat and I am going to tell you my story.

___ Ever since, I have lived happily decorating the child's room from a place of honor.

Problems A, B and C reprinted with permission from Odyssey: A Curriculum for Thinking (Understanding Language). Copyright 1986. Mastery Education Corp., 85 Main St., Watertown, Massachusetts 02172.

D. The Brain

___ Initially, they are amazed to know that they possess such a beautiful instrument for learning.

___ Then they become curious about how the brain could be used to fulfill this potential for learning.

___ What happens when students discover the wonder of the brain?

___ In addition, they are impressed that they must have a great deal of unused potential.

Find the Answer Key on pg. 20.

Get lost? A map can help you find your way back

Sometimes it's hard to make sense of long reading assignments teachers give you.

Here are some mapping strategies to take the pain out of reading, note-taking and studying.

What is a map? A map is a picture that shows main ideas and details and the relationships between them. A map can help you read textbook chapters and review your notes before a test.

To make a map, follow these steps:

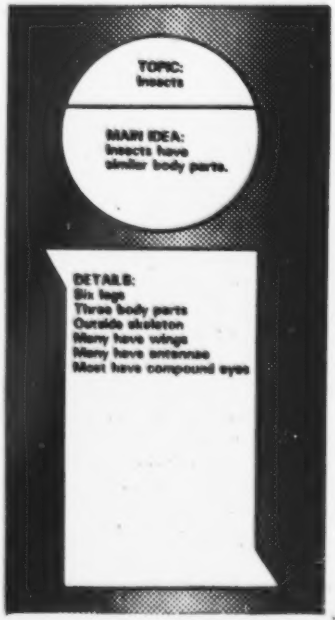
1. Read the material.

2. Figure out the main idea or subject.

3. Place the main idea in the center of the map. (Hint: A map that is a creative drawing can help you remember better!)

4. Write the supporting details and facts in the area surrounding the center.

Below are two examples of completed maps. The one shaped like the lower case letter "i" maps a paragraph about insects. The one with the drawing of a fuzzy bacteria maps a paragraph on that subject.



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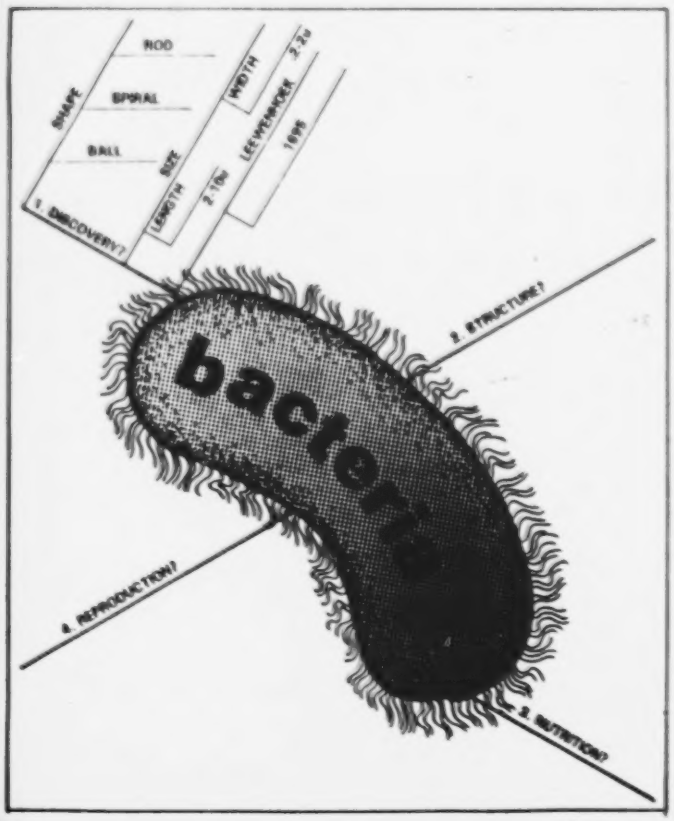


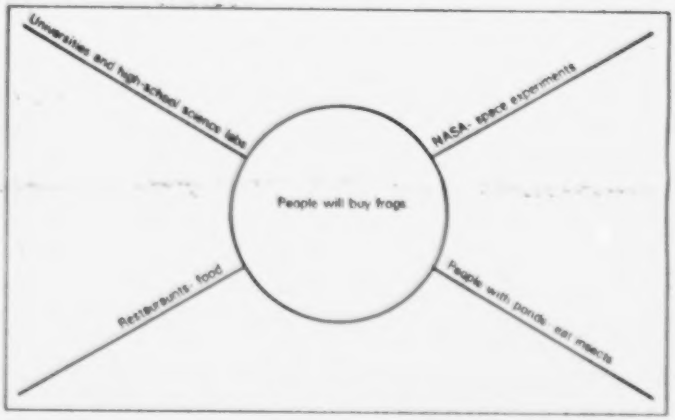
Here's an example that takes you through the mapping process one step at a time:

Directions: SURVEY the paragraph below. On a separate sheet of paper, write what you think the *main idea* of this paragraph is.

A PROFIT IN FROGS

People don't usually think of frog raising as a profitable business, but many people are willing to pay for frogs. Universities and high schools buy frogs for use in their science labs. Restaurants will pay $4.50 more for a pound of dressed frog meat, as frogs are considered a delicacy by many people. NASA uses frogs in space experiments and will pay $25 or more for a healthy bullfrog. Probably more frogs have orbited the earth than people. People who own ponds will also buy frogs because frogs can help to keep down the insect population. So the next time that you think about leaving a frog in your teacher's desk, you may decide that there's a more profitable use for your hopping, green friend.

Once you've SURVEYED a paragraph, you usually have a sense of what the *main idea* is. Now, read the paragraph at your normal rate of reading. As you read, look for SUPPORTING DETAILS which prove, explain, or tell you more about the main idea. Write them down on your sheet of paper, then look at the sample map below and see how we've mapped this paragraph.


Universities and high schools/ science labs
NASA: space experiments
People will buy frogs
Restaurants: food
People with ponds: eat insects

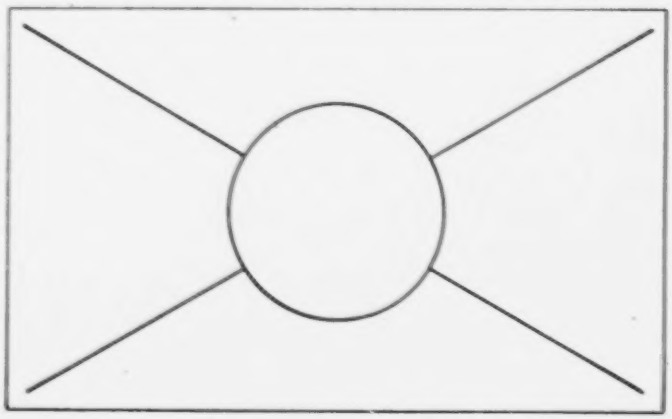
Here's a chance for you to try filling in a map on your own.

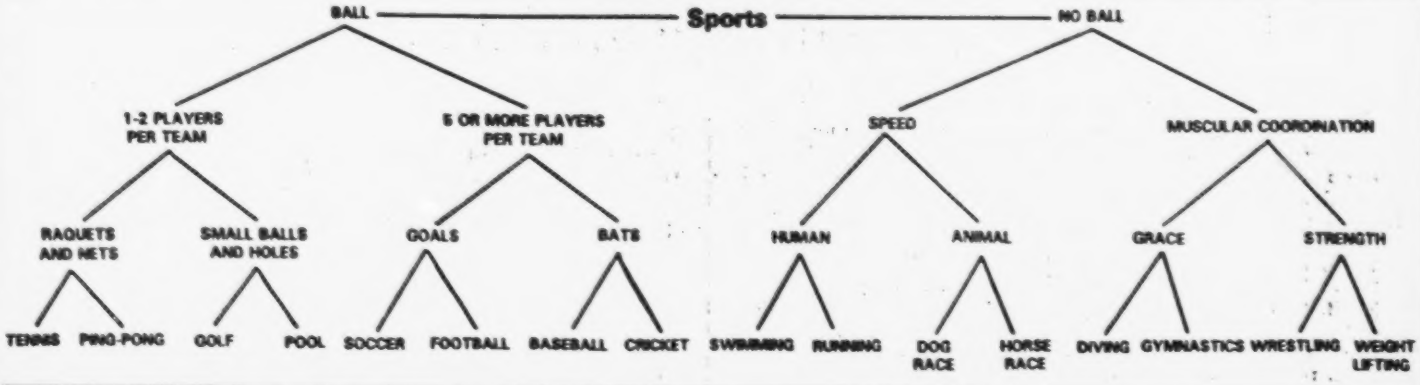
Directions: Survey the paragraph which follows. Then read it and take notes in the blank map on the bottom of this page.

SMART CHIMPS!

Chimpanzees are among the most intelligent animals on earth other than human beings. The structure or makeup of the chimpanzee brain is a lot like

(Continued on next page)





Mind-reading works best when you use your head

Here is your problem:

I am thinking of a sport. Which one is it?

How will you proceed? One way would be to guess wildly and hope you stumble upon the right answer. Messy approach. It's based on luck more than logic, and furthermore, it takes too much time.

Look at the chart on this page. Sixteen sports are listed. The sports are divided into classes by characteristics.

To be a logical mind reader: plan a questioning strategy that will take you from the top of the hierarchy downwards as you logically eliminate possible answers. Can you "read my mind" with four questions? Take turns practicing with partners.

After trying the sports problem, move on to "mind reading" with numbers.

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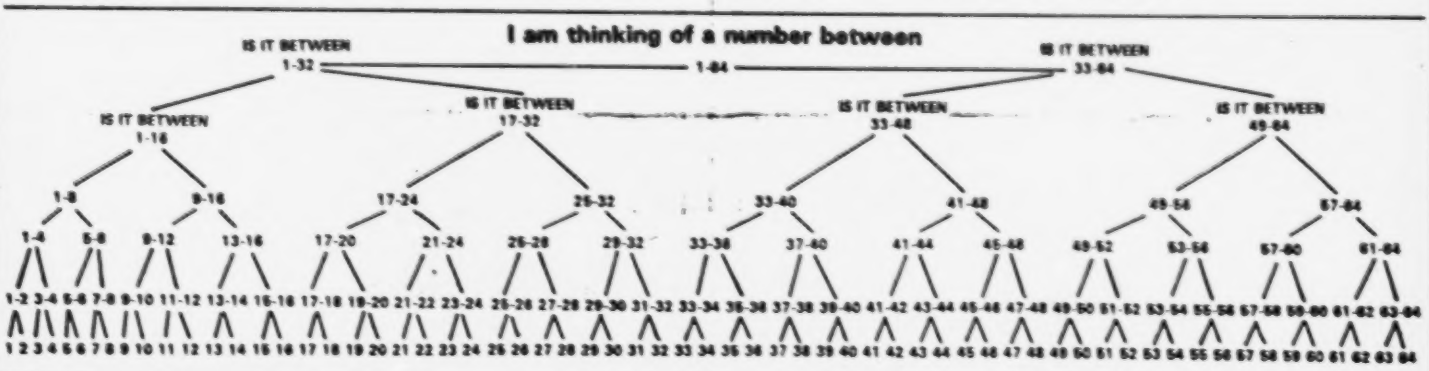

Make a map your guide to better reading retention

Continued from preceding page

the structure of the human brain. Chimps have the ability to use simple tools. In recent years, scientists have found that chimps communicate with each other through noises and gestures. Chimps also seem to be able to learn words when scientists teach them. They don't talk, of course, but can recognize words and make signs that stand for words.

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Here's a chance for you to draw your own map and fill it in yourself.

Directions. Read the passage below and create a map that could help you remember the main ideas and supporting facts.

ANOREXIA NERVOSA

A serious weight loss can be hazardous to an individual's health. Anorexia Nervosa (pronounced an-o rex' i-a ner-vo' sa) is a medical term for an unreasonable fear that food will make someone fat. This disorder is said to affect five out of every 100,000 Americans, mostly female.

The sufferer has no physical disorder that would explain her loss of appetite. A refusal to eat usually begins between the ages of 10 and 15. The body weight may drop by half. Symptoms include digestion problems or sudden vomiting. Ironically, the anorexia victim feels no hunger; furthermore, she is able to maintain daily activities at a near-normal pace. Surprisingly, she's not concerned with her condition.

Since the victim often refuses to eat for a variety of reasons, it is generally believed that anorexia nervosa is a symptom for another problem rather than a disease. Many victims think their loss of weight is caused by a desire to avoid getting fat. Others claim they don't eat because they're afraid of food or eating itself.

Treatment of this disorder has been successful in many cases; however, some patients develop infections or other illnesses. Therefore, hospitalization in the early stages is strongly recommended. Psychiatric conferences are advised in all cases and absolutely necessary in some.

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Good readers take surveys and make predictions

Good readers read with understanding; they think about what they are reading; and they remember what they've read long after they've closed the book.

Good readers follow a certain routine. First, they *survey* what they will read. This means they skim through the pages, looking at the titles, headings, captions and pictures. Good readers ask themselves:

1. Do I know anything about this subject already?
2. Do I have any questions before I start reading?
3. What do I think this passage (chapter, unit, story, etc.) will be about?

This activity will give you practice making predictions about articles from the newspaper.

They know it all

Kids are kidding about geography

Here's a headline from an opinion piece written by Calvin Trillin. Based on the headline alone, what do you predict is Mr. Trillin's point of view about kids and geography?

My prediction. This opinion piece is about

Here's a headline from a sports human interest story. Based on the headline alone, what do you predict is the topic?

Off the wall, it's softball — year round

My prediction. This article is about

Yo! Keep it down out there!

Here's a headline from an editorial. Based on the title of the editorial alone, what do you predict is the topic?

My prediction. This editorial is about

Here's a headline from a magazine lifestyle feature. Based on the headline alone, what do you predict is the topic?

The Trigger Effect

My prediction. This article is about

Now read the article on page 16 and see if your prediction was accurate. When you have finished reading, see if you can summarize the main ideas of the piece in a sentence or two. Summarizing is a good way to check to see if you understood what you read.

Practice your reading and predicting skills with some additional examples from the newspaper. Do not turn to the articles (they appear at the bottom of this page and on pages 16 and 17) until your prediction is made. No fair peeking!

Yo! Keep it down out there!

It's difficult, on Chestnut Street especially, to determine the chief offender of the human ear drum. Saxophones battle SEPTA buses. Record and clothing merchants blast comeons. And, prowling the curbsides and seizing the planter-box tops, there are the boom boxes, those portable radios and tape players that can rival suitcases in size.

With some regularity, the boxes wander into residential areas, occasionally setting up late-night shop beneath the windows of working people. They're a nuisance, though perhaps not quite the pervasive nuisance they were a few years ago.

Whatever, it's welcome news that none other than Councilman John Street, a man with volume-control problems of his own, is taking on the boxes with a series of bills that would limit their decibels and playing hours.

This never may become a truly box-free city, but until common courtesy makes a come-back, Mr. Street's proposed ordinances have a lot of emotional appeal. Motion seconded.

They know it all

Kids are kidding about geography

By Calvin Trillin

I've done everything to avoid facing up to the geography crisis. It's not that I haven't seen the evidence. Every week I seem to read about the results of yet another study confirming a shocking level of geographical ninnyism among the young.

Apparently, if you asked the average American high school student where, say, Alabama is, he might identify it as the capital of Chicago, which he thinks of as a large country somewhere in the Middle East. A high school student who lives in Montgomery or Birmingham or Huntsville wouldn't say that about Alabama, of course; he'd say it was a football team.

I tried to ignore all of this. When I'd read what percentage of American college sophomores identified London as a small country in France, I'd say something like, "Well, kids'll be kids." After all, every week I was also reading about the results of studies demonstrating ninnyism in any number of other fields. In the United States there is a firmly established custom of sending researchers around the country to prove to ourselves how dumb we are.

The newspapers are constantly running results of surveys showing what percentage of citizens don't know who their member of Congress is and how many of them, when presented with a multiple choice question, identify haute cuisine as the French foreign minister. I myself live in fear that one day, as I'm walking innocently down the street, I'll be accosted by some smart-aleck survey-taker who will demand that I give him the name of the secretary of labor.

Once, just after I had spent a few days in Baton Rouge witnessing what seemed to me particularly bizarre behavior in the Louisiana legislature, a man I knew in New Orleans tried to put it all in perspective for me by saying, "What you have to remember about Baton Rouge is that it's not the southern United States; it's northern Costa Rica." He didn't mean it literally, I figured, so why assume that college freshmen are being literal if they happen to identify Baton Rouge as a continent very near Cambodia?

But I realized that I was just kidding myself. I realized that I wasn't facing up to the geography crisis because I resented the fact that American students no longer seemed to value what happened to have been my best subject.

Even now I remember that Lake Titicaca in Peru is the highest, deepest lake in the world (other lakes are higher and other lakes are deeper, but no lake is both higher and deeper). Even now I can name the leading mineral products of Missouri (lead and zinc). Who were these wise guys students to act as if such knowledge was not worth having!

That's when it hit me: Students do tend to be wise guys. Maybe what we've been told is a geography crisis is actually an elaborate prank played by high school students.

I can imagine more or less the same scene being repeated all across the country. Three or four high school boys are lounging around a local video-game parlor when they are approached by a carefully-dressed man who is wearing a suit and carrying a clipboard. He asks them if they would volunteer to answer a few questions for a survey, in return for which the next round of Pac-Man will be on him.

"Ronnie Joe here can help you," the boys say, pushing forward a slack- jawed young man with a haircut that suggests an Apache who is toying with the idea of going over to the Rastafarians. As it happens, Ronnie Joe is the captain of the high school geography team — a geographical ace who has, in state competition, rattled off the capitals of Upper Volta and Luxembourg, correctly answered a question about which mountain ranges are found in Hungary, and recited the principal products of Surinam in the order of their importance.

"Where is Russia?" the researcher asks.

"Two down from Bolivia." Ronnie Joe says, looking proud.

"What is the Danube?"

"A punk waltz group," Ronnie Joe says, as the researcher solemnly scratches away at his clipboard and Ronnie Joe's friends try to conceal their giggling by hiding behind the video games.

The researcher gets what he came for, and is promoted to the survey that shows how dumb grown-ups are. A week later, he stops me in the street and asks me to name the secretary of labor. I tell him that I can't seem to remember the name right off hand. He makes a notation on his clipboard, thanks me, and walks away — not realizing that I'm in on the joke.

This opinion piece appeared on the Op-Ed page of The Philadelphia Inquirer on Sunday, Sept. 21, 1986. Calvin Trillin has written for The New Yorker, The Nation and other magazines.

Off the wall, it's softball — year round

By Paul Scicchitano
Special to The Inquirer

Jeff Hauser's Princeton Tavern jersey was stretched taut over a paunch that would do any weekend athlete justice as the 29-year-old Northeast Philadelphia man looked to capture a small piece of softball history.

With two out in the top of the seventh, Hauser, a southpaw, lofted the bright orange ball toward the batter, who smashed a towering fly toward the outfield.

Let the record show that the ball never made it that far. It struck a ceiling and dropped into the shortstop's glove for the last out of the game.

This was the grand-opening game last week at the Millcreek Sports Center in Feasterville. Its owners say it is one of only four such indoor softball facilities in the country and the first this side of St. Louis.

For softball enthusiasts such as Hauser, it is a place to keep this summertime sport alive year-round in a climate-controlled atmosphere of blue walls and AstroTurf.

For its two owners — Howard Bell, 25, and his roommate Joseph. D. Smith, 26, of Bensalem — it is a potential gold mine.

"The big difference inside is the walls as well as the ceilings," said Bell, who quit his job as a controller with a supermarket chain to start the business along with Smith, who had been a stockbroker. "It's what indoor soccer is to soccer."

The blue wooden walls surrounding the field are 16 feet high, with a 14-foot tarpaulin over an outfield wall running from left center field to right center field.

"You have to be much more on your toes, I think," said Smith. "You have to adapt to playing a ball off the walls. The only drawback is for the guys that hit the big, big blasts. . . . If it hits off the ceiling it's just a regular hit."

If the ball is caught after striking the netted A-frame ceiling or one of the sidewalls, it is an out. And a ball is in play after striking the outfield wall unless it hits a 15-foot-high pyramid-shaped spot atop the tarp, in which case it is a home run.

Although the facility has been officially open less than a week, it has already spawned the term "wallball" to describe such off-the-wall plays.

This is an excerpt from an article which appeared in The Philadelphia Inquirer on Sunday, Sept. 21, 1986.

You profit from using your prior knowledge

Directions. Work with a partner. The partner will read you eight sentences. The object is to remember the details well enough to answer some questions afterwards.

Partner reads aloud:

Set 1

1. Joe has an axe.
2. Carol flies a kite.
3. Harry hit the ceiling.
4. Jill likes to sail.
5. Sally is on the roof.
6. Bill gathered the eggs.
7. Diane flipped the light switch.
8. Cheryl lost her job.

Partner asks these questions:

1. Who sailed the boat?
2. Who is on the roof?
3. Who flew the kite?
4. Who got the eggs?
5. Who hit the light switch?
6. Who lost a job?
7. Who has an axe?
8. Who hit the ceiling?

How did you do? Don't be too disappointed with the results and the poor performance of your memory. It's hard to remember isolated, meaningless sentences that don't connect in any way to information already in your brain's knowledge base.

Switch partners. This time the partner reads these eight new sentences aloud:

Set 2

1. George Washington has an axe.
2. Ben Franklin flies a kite.
3. Julius Erving hit the ceiling.
4. Christopher Columbus likes to sail.
5. Rudolph the red-nosed reindeer is on the roof.
6. The Easter Bunny gathered the eggs.
7. Edison flipped the light switch.
8. Nixon lost his job.

The partner should now ask the same set of questions that followed Set 1. I'll bet you remembered a lot more this time. Prior knowledge is a base of information you always can call upon. Use it!

The Trigger Effect

By Patricia McLaughlin

The fashion magazines agree that hair is longer this fall. Doesn't it make you wonder whose hair they're talking about? Is your hair longer? Or did you try a nice, cool extra-short haircut for the summer? Which means that, now that hair is longer, your own particular hair is a slightly grown-out, somewhat awkward version of short.

If your hair actually is longer this fall, what are you doing with it? Usually, what keeps women going through the dozen or so unmanageable intermediate lengths between the stylishly short cut they got bored with and the longer style they envision is the prospect of all the interesting things you can do with long hair. Of course, once you finally have long hair again, you remember that you have no choice but to do things with it because otherwise it falls in your face and you can't see where you're going.

Only, if your long hair's always screwed up in a bun or roll or twist or braid, what's the point of having it be long?

The Trigger look that surfaced this summer — hair pulled back in a hinged vertical comb so it tumbles down the back of the head, halfway like a horse's mane and halfway like a mohawk, only without the half-scalped effect — offers a novel solution to this dilemma. Not a perfect one, since the Trigger combs are tricky to put in and even trickier to get out — they tend to pull out little wads of hair with them. But they do manage to get your hair out of your face and give it some shape without having it disappear into a tight little knot.

[illegible]

Never remember? Don't forget this!

An assortment of strategies can be learned to help you remember your schoolwork better. Here are a few of them:

Grouping

The brain remembers best when it can connect new information with already existing data in its memorybank. Make the best use of your memory by trying to see connections between old and new information. What you read makes more sense when you group information. That is, organize it into big ideas, subtopics and supporting details. Make a mental outline as you study; outline your notes in your notebook margins.

Visualizing

A strategy that serves students well is creating mental pictures. You will conjure up a picture when asked to recall that information.

Repeating

Another way to retain ideas is to try memorizing them by repeating them to yourself over and over again. Unfortunately, research shows that the brain forgets 80 percent of the information learned this way in 24 hours!

Mnemonics/ Acronyms/ Associations

For as long as there have been schools, there have been tests, and imaginative students who have made up sayings to improve their memories. "A Rat In Tom's House Might Eat Tom's Ice Cream" is one way to remember the spelling of arithmetic. "SOHCAHTOACTAO," a mnemonic for remembering the formulas for sine, cosine, tangent and cotangent, stays in your mind long after the math test is over.

Linking

Linking is a strategy that combines the best of both the grouping and visualization techniques. Do the following activity and try if for yourself.

Linking for learning

Directions. The object of this activity is to remember as many words as possible. You have 30 seconds to look at List I below. When time is up, cover the list and write down as many as you can remember. Chances are you didn't remember as many as you would have liked to.

The brain can't store a great deal of unrelated information. Now, for the next part of the activity, take 30 seconds and try to memorize List II. This time link the words together in some way with either a picture or a saying. Compare your performance from List I to List II. Linking does improve your learning!

List I

fish	spoon
shot	key
ice	month
staff	red
talk	skates
sun	new
room	shoe
school	teeth
ball	idea
bridge	math

List II

way	sect
change	board
study	turn
wine	dream
fact	coach
poet	state
brain	deer
leak	fight
cart	teacher
dead	ten

Make 'to do' lists to make better use of your time

"I meant to study more for the midterm exam, but I just didn't have the time!"

Do you find yourself saying that with some regularity? Especially after getting a low grade on a test? Everyone has the same 24 hours a day. However, no two people use that time in the same way. It all comes down to making choices: conscious decisions about how to spend time.

The "Output" section of the supplement will help you think about how you use your time.

Consider these three questions:

- How do you spend your time?
- How do you waste your time?
- How do you set goals to use time more wisely?

Let's look at these questions one at a time.

How do you spend your time?

Keep a diary for a week, charting on this blank schedule exactly how you spend your leisure time on weekdays between school dismissal and bedtime. Do what you normally do. Keep accurate notes.

Once your diary is complete, analyze the time graphically, in a pie chart. Cut the pie into pieces to reflect exactly how you spend your time. The notes on your diary schedule might fall under some of the categories listed below. Include them in your pie chart.

FRIENDS
FAMILY
JOB
HOME CHORES
YOU (PERSONAL)
RECREATION
AFTER SCHOOL ACTIVITIES
SPORTS
HOMEWORK
OTHER (SPECIFY)

How do you waste your time?

The basic data-gathering part of your task is now complete; it's time to make an analysis. Complete this checklist to determine your time- wasting behaviors. Rank order the items, placing a 1 to the left of the biggest time waster, a 2 to the left of the second-biggest time waster, and so on down the list.

Drop in visitors

Personal disorganization

Inaccurate or inadequate information

Unclear communications

Telephone interruptions

Audiovisual distraction (TV, VCR, Stereo, ETC.)

Indecision

Procrastination (The "I will do it tomorrow syndrome")

Naps

Daydreaming

Trips to the mall

Focus on unimportant details

Lack of priorities, goals or a plan of action

Anxiety attacks

Other (specify)

How do you set goals to use time more wisely?

Look at your top five time-wasters. If you want to change your behavior, translate them into goals.

How do you spend your time

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
3:00-4:00 P.M.					
4:00-5:00 P.M.					
5:00-6:00 P.M.					
6:00-7:00 P.M.					
7:00-8:00 P.M.					
8:00-9:00 P.M.					
9:00-10:00 P.M.					
10:00-11:00 P.M.					
11:00-12:00 P.M.					

What is a goal? A goal is something you want to accomplish or achieve. The best way to get something done is to plan for it with a goal. And there's no better time than January, the start of a New Year, to put some study goals down on paper. (Hint: call them goals, not New Year's resolutions. People never keep their resolutions.)

A goal has three sections:

- A time component (When)
- A behavior or task to carry out (What)
- An action plan (How)

For example:

My goal: By Friday I will read chapter three in my social studies textbook.

My action plan: There are 30 pages in chapter three. Today is Monday. I can break the task down into three manageable pieces and read 10 pages a night on Tuesday, Wednesday and Thursday.

Goals can be short-term, like this example of a weekly reading assignment, or long-term, covering weeks, months or even years. Goal statements and action plans translate into daily lists of "things to do." Checking off your "to do" list, item by item, day by day, is a great feeling: an end to time wasting and the beginning of productivity. Create a system that works for you.

DATE / TO DO LIST	CHECK-OFF
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

Set some study goals. Here's a space to work on them:

GOAL ONE (when, what).

ACTION PLAN (how).

GOAL TWO.

ACTION PLAN.

GOAL THREE.

ACTION PLAN.

How do you learn best?

Directions: Read each question on the checklist. Think carefully about each question and respond as honestly as you can by placing a check mark in the column that best describes your present LEARNING TO LEARN behavior. Use the results as a prescription for areas that need work.

	ALWAYS	SOMETIMES	NEVER
Prereading			
1. Do you look at the table of contents before reading a book?			
2. Before reading do you preview headings, pictures, captions and look for summaries?			
3. Do you ask yourself, "What do I know about this subject?"			
Reader Text Interaction			
4. Do you make a note of new words and check them in a dictionary?			
5. Do you write down questions that come up while reading?			
6. Do you read in small parts, stop and ask yourself, "What have I just read?"			
7. Do you look for main idea?			
8. Do you take notes while you read (in map, outline or study guide form?)			
Post Reading			
9. Do you think about what you've read and try to connect it with ideas from previous readings?			
10. Do you summarize in written form what you have just read in a sentence or two?			
11. Do you use different strategies to remember information you read?			
Preparing to Study:			
12. Do you study in quiet surroundings, free from distractions?			
13. When you are ready to study, do you have all the materials needed?			
14. Do you have a study plan to budget your time among subjects?			
15. Do you study the hardest subjects first?			
Test Taking:			
16. Do you read over the entire test before you begin?			
17. Do you wear a watch, budget your time per section to pace yourself?			
18. Do you read and follow directions carefully, underlining where necessary?			
19. Do you answer the easy questions first?			
20. Do you answer all the questions, never leaving any blank?			
21. Do you guess on tests after logically eliminating choices?			
22. Do you practice stress reduction strategies (deep breathing to relax, self-talk) before test-taking situations in order to do your best?			

Part of LEARNING TO LEARN means thinking about how you learn best. Each of us has a learning style.

It would be wrong to imply that one style is better than another. The point is that you can get better at LEARNING TO LEARN if you take the time to analyze what conditions must be present for you to learn most effectively.

For example: If your homework assignment involves learning vocabulary words, key into your learning style and plan accordingly. Auditory learners might tape the words and definitions and play the cassette until the material is learned. Kinesthetic learners could create flash cards while the visual learner prepares with written lists.

Here are the three learning style categories and some characteristics of the learners in each one. Which is most like you?

I learn best when I . . .

Auditory
- ☐ listen
- ☐ am receptive
- ☐ am quiet
- ☐ hear the teacher talk

Kinesthetic
- ☐ try things out
- ☐ am active
- ☐ practice
- ☐ do it
- ☐ experiment
- ☐ get involved

Visual
- ☐ watch
- ☐ observe
- ☐ see an illustration
- ☐ make mental pictures
- ☐ diagram the material

Answer key

INFER/pg.5

2.

(1) Describe what you *see*.
Answer: Two sets of men's footprints standing *within* some sort of structure — or *under* something with four corners.

(2) Describe what is *happening*.
Answer: The two men are talking, probably about deciding where they are.

(3) What is being *said*?
A. "When are they going to free us hostages?"
B. "We'd better call off the elephant hunt — it's getting dark."

3.

(1) Describe what you *see*.
Answer: One male, bigger than the other, standing in front of something that is broken.

(2) Describe what is *happening*.
Answer: The two people are talking about the broken object in front of them.

(3) What is being *said*?
A. "Tell me the truth, son. . . . is this the window you broke with the baseball bat?"
B. "How *terrible*! This is where Mary fell through the skylight?"
C. "Be careful, son . . . there's a big hole in the sidewalk!"

HEAR/pg.3

Activity A
1. 3 minutes (Boil all the eggs together at the same time).
2. 12
3. None. (You can't take dirt from a hole).
4. 4 apples.
5. 1 hour. The alarm clock would go off at 8.
6. 1, one a year that is.
7. All of them.
8. A half-dollar and a nickel. One is not a nickel; the other is.
9. 1 hour.
10. 14,000 + 1400 + 14 = 15,414.

HENRY/pg.9

The correct order of the panels is: 4, 3, 6, 1, 5, 2

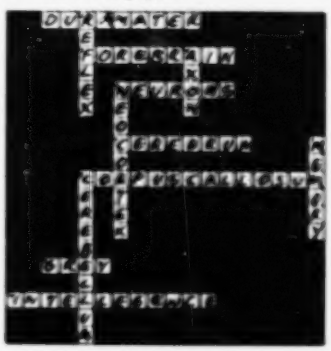
WHERE/pg.6

A-5	F-9
B-7	G-3
C-1	H-6
D-10	I-8
E-2	J-4

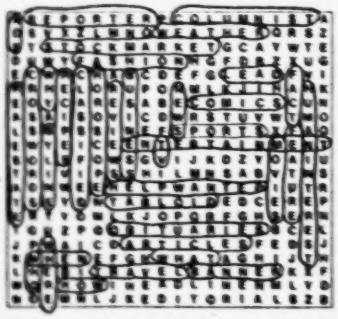
CLASSIFY/pg.9

1. desk/supplies
2. parts of a book
3. window words
4. contents of a pocketbook
5. shower things
6. colors
7. football words
8. forms of transportation
9. types of puzzles
10. ways to gamble money
11. parts of a chair

BRAIN/pg.8



NEWS/pg.7



Answer Key continues on pg. 20.

ALYSA/pg.9

I. Favorite movies
   A. Annie Hall
   B. Stand By Me
   C. Aliens

II. Favorite authors
   A. James Herriott
   B. Stephen King

III. Occupations/avocations
   A. aerobic dancer
   B. freelance writer
   C. librarian
   D. educational trainer

IV. Places I've lived
   A. Long Island, N.Y.
   B. Haddonfield, N.J.
   C. Buffalo, N.Y.

V. Cat accessories
   A. catnip
   B. kitty litter
   C. 9 Lives chicken

VI. Foods I eat
   A. cheesecake
   B. popcorn
   C. Lean Cuisine

READ/pg.10

A. Jack and Jill

2. False, there's no mention of their being angry at each other.

3. True, we can infer there was water.

4. False, there's no description of Jill's physical appearance.

5. True, the story describes the sequence this way.

B. Little Miss Muffett

1. True, the story states that she was frightened by the spider.

2. True, she ate it, didn't she?

3. False, there's no mention of a TV and furthermore tuffets don't have electrical outlets.

4. True, according to this story they can.

5. True, the sequence of events proves this.

C. Snow White

1. True, she's described as being "wicked" and nice people don't do these types of things to their relatives.

2. False, we can't infer that from the story as written.

3. True, she put on a disguise to fool Snow White.

4. False, all we know is that she's unconscious.

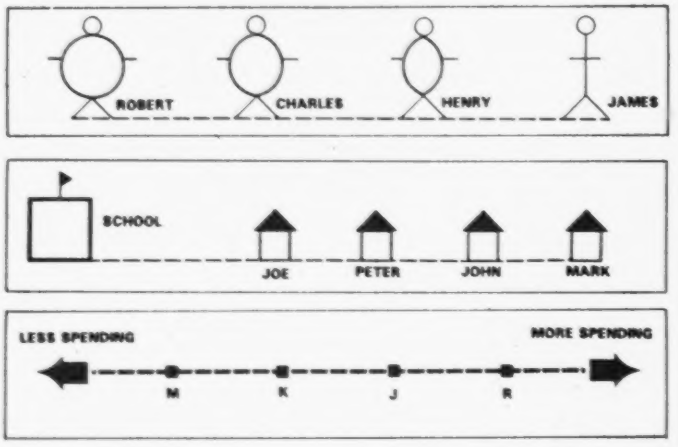
5. False, we have no proof of that.

WORD PROBLEMS/pg.11

A.
Dimension: Weight
Representation:
Solution: Robert is the heaviest and Charles is the next to heaviest.

B.
Dimension: Distance from school
Representation:
Solution: Mark lives the farthest, and Joe the nearest.

C.
Dimension: Spending (money)
Representation:
Solution: Rose spent the most and Mary spend the least.



IMPLIED/pg.10

A. address
B. hours
C. type of food
D. restaurant name

1. Mom's
2. Mom's
3. Versailles
4. Mom's
5. Mom's
6. Mom's
7. Versailles
8. Versailles
9. Mom's
10. Versailles

CREATE/pg.12

A. Saturn is closer to the sun than Uranus but further away from the sun than Jupiter. Uranus is closer to the sun than Neptune. Which planet is the farthest from the sun?

B. In population, Atlanta and Boston are smaller than Chicago, but Atlanta is larger than Boston. New York has more inhabitants than Chicago. Which of the four cities has the smallest population?

THINK/pg.12

A. The Skeleton 4-2-3-1
B. The Guacharo 3-1-4-2
C. Making the Most Out of Life 4-3-2-1-5
D. The Brain 2-4-1-3

For the teacher: Resources for further study

An option for teachers interested in promoting LEARNING TO LEARN skills in the classroom is to review published materials and commercial programs and recommend one for purchase. A sampling of materials currently available and a brief description of each is provided below:

Grades 2-8
Charles T. Mangrum
Learning to Study
Jamestown Publishers
P.O. Box 6743
Providence, RI 02940

Learning to study is a six-book study/skills strategies program featuring instruction and practice in seven major skill categories including: locating, organizing and interpreting information, and study and test-taking strategies.

Grades 7-9
Cherry Hill Study Skills Program
Educational Information and Resource Center
207 Delsea Drive
R.D. 4, Box 209
Sewell, New Jersey 08080

The Cherry Hill Study Skills Program teaches "basic skills." According to the program's definition, these skills include the ability to efficiently retrieve and process information. Specifically, the program focuses on skills related to listening, locating the main idea, drawing conclusions, notetaking, test-taking and locating information in textbooks. In short, this program prepares students for survival in the everyday classroom situation.

Grades K-12
Thinking Skills Materials
Midwest Publications
P.O. Box 448
Pacific Grove, CA 93950

Midwest books and software provide teachers with the resources to teach skills in areas ranging from problem solving and creative thinking to applied logic and classification.

Grades 4-8
Odyssey Program
Mastery Education
85 Main Street
Watertown, MA 02172

The Odyssey Program consists of six courses that build an understanding of basic thinking processes through teacher-directed activities followed by independent student practice. The series (Foundations of Reasoning, Understanding Language, Verbal Reasoning, Decision Making, Inventive Thinking, Problem Solving) can be integrated easily into a range of content areas.

Grades 5-College
hm Study Skills Series
The National Association of Secondary School Principals
Reston, VA 22090

The hm Study Skills Series is based on three assumptions: students learn by actively doing, study skills are subject-specific and study skills must be integrated with content. Accordingly, they offer separate books in math and science as well as general texts at three levels. Skill areas in the series include listening, following directions, note-taking, outlining, mapping, test wiseness and improving memory.

Grades Upper Elementary-High School
Learn How to Study: A Study Skill Program
Richard P. Gallagher
416 Comly Street
Philadelphia, PA 19120

Learn How To Study offers student strategies for effective note-taking and test-taking. Gallagher suggests techniques for improving short-term memory and student motivation.

How this section was produced

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